

LLNL Computation Directorate
Refereed Conference Publications for CY 2003

1. Agarwal, S., G. S. Choi, C. R. Das, A. B. Yoo, and S. Nagar, "Co-ordinated Coscheduling in Time-Sharing Clusters through a Generic Framework," *Proc. International Conference on Cluster Computing*, Dec. 2003. (Nominated for best paper award.)
2. Altintas, I., et.al., "A Modeling and Execution Environment for Distributed Scientific Workflows," *15th Intl. Conference on Scientific and Statistical Database Management (SSDBM)*, Boston, MA, 2003.
3. Anderson, R. W., N. Elliott, and R. Pember, "A Dynamically Adaptive Arbitrary Lagrangian-Eulerian Method for Hydrodynamics," *Proc. of the Second MIT Conference on Computational Fluid and Solid Mechanics*, Cambridge, MA, June 17–20, 2003.
4. Baldwin, C., G. Abdulla, and T. Critchlow, "Multi-Resolution Modeling of Large Scale Scientific Simulation Data," *Proc. 12th International Conf. on Information and Knowledge Management*, pp. 40–48, New Orleans, LA USA, November 2003.
5. Baldwin, C., T. Eliassi-Rad, G. Abdulla, and T. Critchlow, "The Evolution of a Hierarchical Partitioning Algorithm for Large-Scale Scientific Data: Three Steps of Increasing Complexity," *Proc. of the 15th Inter. Conf. on Scientific and Statistical Database Management (SSDBM)*, Cambridge, MA, July 9–11, 2003, pp. 225–228. UCRL-JC-151476.
6. Baza, G., et al., "Djehuty. A Code for Modeling Stars in Three Dimensions," *Astronomical Society of the Pacific Conference Series*, Volume 293: 3D Stellar Evolution, Eds. Turcotte, Keller, Cavallo, Astronomical Society of the Pacific, pp. 1–14, 2003.
7. Bihari, B. L., and P. N. Brown, "Finite Volume WENO Schemes for Integro-Differential Equations," *20th Biennial Conference on Numerical Analysis*, Dundee, United Kingdom, June 24–27, 2003. UCRL-PRES-152355.
8. Bremer, P.T., H. Edelsbrunner, B. Hamann, and V. Pascucci. "A multi-resolution data structure for two-dimensional Morse functions." *Proc. of IEEE Conference on Visualization*, pp. 139–146, October 2003.
9. Brewer, M., L. F. Diachin, P. Knupp, T. Leurent, D. Melander, "The Mesquite Mesh Quality Improvement Toolkit," *Proc., 12th International Meshing Roundtable*, Sandia National Laboratories, pp 239–250, 2003.
10. Cheung, S.S. and C. Kamath, "Initial Experiences with Retrieving Similar Objects in Simulation Data," *Sixth Workshop on Mining Scientific and Engineering Datasets*, San Francisco, CA, May 3, 2003. UCRL-JC-151931.
11. Cole-McLaughlin, K., H. Edelsbrunner, J. Harer, V. Natarajan, and V. Pascucci. "Loops in reeb graphs of 2-manifolds." *Proc. of the 19th ACM Symposium on Computational Geometry*, pages 344–350, 2003.
12. Covello, P., J. Koning, J. Mariani, and G. Rodrigue "Modeling Losses and Interference in Fiber Optic Systems," *Proc. of 2003 AMOS Tech. Conf.*, Wailea, HI, Sept. 8–14, 2003.
13. de Supinski, B. R., J. Cownie, J. DelSignore Jr., and K. Warren, "DMPL: An OpenMP DLL Debugging Interface," *Workshop on OpenMP Applications and Tools 2003 (WOMPAT 03)*, Springer-Verlag, Toronto, Canada, June 26–27, 2003. UCRL-JC-151670.
14. de Supinski, B., C. Mendes, and P. J. Mucci, "PERC Tools for Performance Data Gathering and Analysis," *Tutorial SC2003*, Phoenix, AZ, November 16–21, 2003. UCRL-PRES-2000356.

15. de Supinski, B., T. Mohan, S. A. McKee, F. Mueller, A. Yoo, and M. Schulz, "Identifying and Exploiting Spatial Regularity in Data Memory References," *Proc. SC2003*, Phoenix, AZ, November 15–21, 2003. UCRL-JC-154597.
16. Edelsbrunner, H., J. Harer, V. Natarajan, and V. Pascucci. "Morse complexes for piecewise linear 3-manifolds." *Proc. of the 19th ACM Symposium on Computational Geometry*, pp. 361–370, 2003.
17. Eggleton, P. P. et al., "Prospects for Djehuty," *Astronomical Society of the Pacific Conference Series Volume 293: 3D Stellar Evolution*, Astronomical Society of the Pacific, pp. 15–21, 2003.
18. Girill, T. R., "Documentation as Problem Solving for K-12 Literacy Programs," *ACM Special Interest Group on Design of Communication 2003 Conference*, San Francisco, CA, Oct 12–15, 2003.
19. Graziani, F., D. Slone, "Radiation Transport in 3D Heterogeneous Materials: Direct Numerical Simulation," *American Nuclear Society Winter Meeting*, New Orleans, LA, Nov 16–20, 2003.
20. Ibarria, L., P. Lindstrom, J. Rossignac, and A. Szymczak, "Out-of-Core Compression and Decompression of Large n-Dimensional Scalar Fields," *Eurographics 2003*, Granada, Spain, September 2003, pp. 343–348. UCRL-JC-151934-REV.
21. Isenburg, M., P. Lindstrom, S. Gumhold, and J. Snoeyink, "Large Mesh Simplification using Processing Sequences," *IEEE Visualization 2003*, Seattle, WA, Oct 19–24, 2003, pp. 465–472. UCRL-200016-CONF.
22. Jones, J. E., P. S. Vassilevski, and C. S. Woodward, "Nonlinear Schwarz-FAS Methods for Unstructured Finite Element Problems," *Proc. of the Second M.I.T. Conf. on Computational Fluid and Solid Mechanics*, Cambridge, MA, June 17–20, 2003. UCRL-JC-150427.
23. Kamimura, R., et al., "Use of Numerical Models as Data Proxies for Approximate Ad-hoc Query Processing," *Proc. 7th Joint Conference on Information Systems*, pp. 588–593, Research Triangle Park, NC, September 2003.
24. Kreylos, O., N. Max, B. Hamann, S. Crivelli, and E. W. Bethel, "Interactive Protein Manipulation," *Proceedings of IEEE Visualization*, Seattle, WA, October 19–24, 2003, pp. 581–588.
25. Lamar, E. and V. Pascucci. "A multi-layered image cache for scientific visualization." *Proc. of IEEE Symp. on Parallel and Large-Data Visualization and Graphics*, pp. 61–68, October 2003.
26. Lindstrom, P., "Out-of-Core Construction and Visualization of Multiresolution Surfaces," *ACM SIGGRAPH 2003 Symposium on Interactive 3D Graphics*, Monterey, CA, April 28–30, 2003, pp. 93–102. UCRL-JC-150863-REV.
27. Liu, L., D. Buttler, T. Critchlow, W. Han, H. Paques, C. Pu, D. Rocco, "BioZoom: Exploiting Source-Capability Information for Integrated Access to Multiple Bioinformatics Data Sources," *Third IEEE Symposium on Bioinformatics and Bioengineering*, Bethesda, MD, March 2003.
28. Marathe, J., F. Mueller, T. Mohan, B. R. de Supinski, A. Yoo, "METRIC: Tracking Down Inefficiencies in the Memory Hierarchy via Binary Rewriting," *Proc. Symposium on Code Generation and Optimization*, San Francisco, CA, March 2003.
29. Mariani, J., J. Koning, and G. Rodrigue "Numerical Studies of Fiber Optical Signal Attenuation from Compression and External Fields," *Proc. of 2003 MHPCC Application Briefs*.
30. Max, N., P. Williams, and C. Silva, "Cell Projection of Meshes with Non-Planar Faces," Eds. F. H. Post, G-P. Bonneau, and G. M. Nielson, "Data Visualization: The State of the Art," *Proc. of the Dagstuhl Scientific Visualization Seminar*, May 22–26, 2003, Kluwer Academic Publishers, 2003, pp. 157–168.
31. May, J. and J. Gyllenhaal, "Tool Gear: Infrastructure for Parallel Tools," *2003 International Conference on Parallel and Distributed Processing Techniques and Applications*, Las Vegas, NV USA, June 23–26, 2003. UCRL-JC-152873.

32. Mohan, T., et al., "Identifying and Exploiting Spatial Regularity in Data Memory References," *Proc. SC2003*, Phoenix, AZ, Nov. 2003 (*nominated for best technical paper award*).
33. Nuber, C., E. C. LaMar, V. Pascucci, B. Hamann, and K. I. Joy. "Using graphs for fast error term approximation of time-varying datasets." *Data Visualization 2003 (Proc. of Eurographics VisSym,03)*, New York, NY, 2003. Association for Computing Machinery.
34. Pacheco, P., P. Miller, J. Kim, T. Leese, Y. Zabiya. "Object-Oriented NeuroSys: Parallel Programs for Simulating Large Networks of Biologically Accurate Neurons," *10th European Parallel Virtual Machine/Message Passing Interface Conf.*, Venice, Italy, Sep 29–Oct 02, 2003, UCRL-JC-153186.
35. Pascucci, V., D. E. Laney, R. Frank, G. Scorzelli, L. Linsen, B. Hamann, and F. Gygi. "Real-time monitoring of large scientific simulations." *Proc. of the 18-th annual ACM Symposium on Applied Computing*, pages 194–198, Melbourne, FL, March 2003.
36. Pope, G. M., "Risk Based Regression Testing, DOE Software Quality Forum (SQF) 2003," *DOE/NNSA Software Quality Forum 2003*, Arlington, VA, March 25–26, 2003. Received the Inaugural George Merren Memorial Award for "Best of Show."
37. Quinlan, D., M. Schordan, Q. Yi, and B. de Supinski, "A C++ Infrastructure for Automatic Introduction and Translation of OpenMP Directives," *Workshop on OpenMP Applications and Tools (WOMPAT'03)*, Lecture Notes in Computer Science, Springer Verlag, ed., 2716, June 2003, pp. 13–25.
38. Quinlan, D., M. Schordan, Q. Yi, and B. de Supinski, "Semantic-Driven Parallelization of Loops Operating on User-Defined Containers," *16th Annual Workshop on Languages and Compilers for Parallel Computing*, Texas A&M University, College Station, TX, October 2–4, 2003.
39. Rieben R., G. Rodrigue, and D. White, "Arbitrary Order Hierarchical Vector Bases for Hexahedrons," *Proc. of IEEE Ant. and Prop. Soc.*, Columbus, OH, June 22–27, 2003.
40. Rocco, D., and T. Critchlow, "Automatic Discovery and Classification of Bioinformatics Web Sources," *Proc. of the Georgia Tech Conference on Bioinformatics*, Nov. 2003.
41. Rocco, D., D. Buttler, L. Liu. "Page Digest for Large-Scale Web Services." *Proc. IEEE Conference on E-Commerce*, 2003.
42. Schordan, M. and D. J. Quinlan, "A Source-to-Source Architecture for User-Defined Optimizations," *Joint Modular Languages Conference (JMLC'03)*, Lecture Notes in Computer Science, Springer Verlag, ed., 2789, August 2003, pp. 214–223.
43. Schilling, O., M. Latini, W. S. Don, and B. L. Bihari., "WENO Simulations of Single- and Multi-mode Richtmyer–Meshkov Instability-Induced Mixing," *American Physical Society 56th Annual Meeting—Division of Fluid Dynamics*, East Rutherford, NJ, November 23–25, 2003.
44. Schilling, O., M. Latini, W. S. Don, and B. L. Bihari, "High-Resolution Simulations of Single- and Multi-mode Richtmyer–Meshkov Instability-Induced Mixing," *9th International Workshop on the Physics of Compressible Turbulent Mixing*, Cambridge, United Kingdom, July 23–25, 2004.
45. Silva, C., Y. Chiang, J. El-Sana, P. Lindstrom, R. Pajarola, "Out-of-Core Algorithms for Scientific Visualization and Computer Graphics," Tutorial at *IEEE Visualization 2003*, Seattle, WA, Oct. 19–24, 2003. UCRL-PRES-201063.
46. Stanton, V. L., W. Korbe, and J. Gao. "iES: An Intelligent Electronic Sales Platform," *Proc. from the Sixth International Conference on Electronic Commerce Research*, October 2003. UCRL-CONF-200487.
47. Storch, N. "Doing Software Process Improvements in a Research and Development Environment," *DOE/NNSA Software Quality Forum 2003*, Washington, DC, March 2003, UCRL-PRES-150210.

48. Thompson, S., et al., "A Comprehensive GCM-based Climate and Carbon Cycle Model: Transient Simulations to Year 2100 using Prescribed Carbon Emissions," *EGS-AGU-EUG Joint Assembly*, Nice, France, April 2003. UCRL-JC-150190.
49. Thompson, S., et al., "A Coupled Carbon Cycle in PCM2: Transient Simulations for 1870-2100," *Int'l. Conf. on Earth System Modeling*, Hamburg, Germany, September 2003. UCRL-PRES-155265.
50. Wijesinghe, H.S., R. D. Hornung, A. L. Garcia, and N. G. Hadjiconstantinou, "3-Dimensional Hybrid Continuum--Atomistic Simulations for Multiscale Hydrodynamics," *Mechanical Engineering Congress and R&D Expo*, 2003 American Society of Mechanical Engineers International, Washington, DC, November 15–21, 2003. UCRL-JC-151323.
51. Williams, E. A., D. E. Hinkel, and J. A. Hittinger, "Crossed Beam Energy Transfer in the NIF ICF Target Design," *2003 Third International Conference on Inertial Fusion Sciences and Applications*, Monterey, CA, Sep. 7–12, 2003. UCRL-JC-152016.
52. Wissink, A., D. Hysom, and R. Hornung, "Enhancing Scalability of Parallel Structured AMR Calculations," *Proc. of the 17th Annual ACM International Conference on Supercomputing*, San Francisco, CA, June 23–26, 2003, pp. 336–347. UCRL-JC-151791.
53. Wong, K. L. and T. R. Girill, "Solutions for XML Document Navigation and Delivery," *DOE Interlab 2003 Conference*, Menlo Park, CA, USA, November 4–7, 2003. 12 pp. UCRL-PRES-200713.